Anderson Dam Federal Energy Regulatory Commission Order Compliance Project
Project No. 91864005

Engineer's Report

June 2020

Dam Safety & Capital Delivery Division

Valley Water

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ANDERSON DAM
FEDERAL ENERGY REGULATORY COMMISSION
ORDER COMPLIANCE PROJECT

PROJECT NO. 91864005

ENGINEER'S REPORT

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JUNE 2020

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A. PROJECT DESCRIPTION

The proposed Anderson Dam Federal Energy Regulatory Commission Order Compliance Project (FOCP) is located near the junction of Cochrane Road and Coyote Road in Santa Clara County, California, 2.5 miles northeast of downtown Morgan Hill, California (see Figure 1. FOCP Project Overview).

Anderson Dam is under the jurisdiction of the Federal Energy Regulatory Commission (FERC) and California Department of Water Resources, Division of Safety of Dams (DSOD) and must meet their dam safety design standards. FERC has jurisdiction over Anderson Dam safety measures and operations due to licensing a small hydroelectric facility on this reservoir.

Pursuant to FERC's authority, for public health and safety reasons, on February 20, 2020, the Santa Clara Valley Water District (Valley Water) received an Order from FERC to immediately implement the following interim risk reduction measures: (a) immediately lower and maintain the reservoir operating level no higher than elevation 565 feet; (b) lower the reservoir to elevation 488 feet (deadpool) beginning no later than October 1, 2020, as safely and quickly as possible and maintain deadpool to the extent feasible; (c) immediately design and construct the low-level outlet tunnel (Anderson Dam Tunnel) to more reliably and quickly drawdown the reservoir after an earthquake and/or to better maintain deadpool during significant precipitation; and (d) implement the dam safety directives, including design and construction of the proposed low-level outlet, while securing alternative water supplies and working with FERC staff, and federal, state and local resource agencies to minimize environmental effects.

Pursuant to FERC's Order, Valley Water immediately restricted the reservoir operating level to elevation 565 feet; began defining the interim risk reduction measures; and initiated emergency consultation processes regarding adverse environmental impacts of these interim risk reduction measures with the regulatory agencies, as appropriate.

The FOCP is a set of proposed interim risk reduction measures as set forth in the FERC Order during the interim time period prior to construction and operation of the Anderson Dam Seismic Retrofit Project (ADSRP). The FOCP consists of four broad categories of actions as identified below. Within these broad categories are ten main Project features which are further included within these broad categories.

Category I. Reservoir Drawdown

As the FERC Order concludes, until full remediation through the ADSRP is completed, the dam safety risk at Anderson is unacceptably high. A full drawdown of the reservoir to deadpool beginning on October 1, 2020, and maintenance of deadpool to the extent feasible, reduces the risk of an uncontrolled downstream releases as much as possible given the current condition of the dam. Because drawing down the reservoir to deadpool may result in reservoir rim and bank instability, Valley Water will implement monitoring and implementation of geotechnical stabilization measures to address those potential adverse impacts. In addition, drawdown to, and maintenance of deadpool may adversely affect water supplies, land surface elevations, and groundwater recharge, which must also be addressed by avoidance, minimization and mitigation measures. (See Category IV. Avoidance and Minimization Measures) In addition, drawdown to, and

maintenance of deadpool may adversely affect aquatic resources, water supplies, land surface elevations, and groundwater recharge, which must also be addressed by avoidance, minimization and mitigation measures (See Category IV.).

Category II. Anderson Dam Tunnel Construction

The Anderson Dam Tunnel is a diversion system composed of a tunnel, connected to an outlet structure, that is necessary to better and more consistently stay within the FERC-directed reservoir elevation of 488 feet, as the current outlet, with only a 500 cubic feet per second (cfs) capacity, is undersized for the amount of inflows Anderson Reservoir receives. Additionally, in the event of an earthquake, the existing outlet could cease to function, causing the reservoir to rise to unsafe levels and potentially resulting in an uncontrolled release and/or a catastrophic dam failure. The proposed Anderson Dam Tunnel would be capable of efficiently and safely passing larger inflows (up to 2,000 cfs capacity), would be seismically robust, and would be expected to continue to function after an earthquake.

Category III. Anderson Dam Tunnel Operation and Maintenance

Operating the Anderson Dam Tunnel once it is constructed to maintain elevation 488 feet to the extent feasible requires release of maximum flows of 1,500-2,000 cfs, together with operation of the existing outlet to release flows of up to 500 cfs, resulting in a combined maximum outflow of 2,000 to 2,500 cfs. Releases of flow up to full capacity of the tunnel and existing outlet is necessary to keep the reservoir as close as possible to deadpool during storm events, while taking into account potential downstream flood risks and deploying other flood management improvements and operational measures to address downstream flood risk (See Category IV. Avoidance and Minimization Measures).

Category IV. Avoidance and Minimization Measures

Bank and Rim Stability Improvements. Geotechnical investigations will be carried out and monitoring devices will be installed in the areas of known landslides along Anderson Reservoir rim to address potential impacts of reservoir drawdown. If additional measures are determined necessary, the Project would include the installation of necessary structural improvements to protect against potential landslides.

Existing Intake Structure Modifications. Geotechnical investigations will be carried out and monitoring devices will be installed near the intake structure to address potential geotechnical impacts of dewatering on the existing outlet structure. If additional measures are determined necessary, the Project would include the installation of necessary structural improvements to reinforce the existing Anderson Dam intake structure.

Creek Channel and Bank Erosion Control Modifications. Modifications required to minimize erosion to accommodate drawdown and water management operations downstream of Anderson Dam.

Imported Water Releases and Cross Valley Pipeline Releases Extension. To maintain water supply, groundwater recharge, and prevent subsidence while Anderson is unavailable to provide current water storage and releases during the summer, provide

for imported water releases to Coyote Creek and construction of a new Cross Valley Pipeline (CVP) segment to discharge downstream of the County of Santa Clara-owned Ogier Ponds.

Coyote Percolation Dam Replacement. To protect aquatic resources, water supply, and groundwater recharge, and to reduce subsidence from the effects of dewatering and maintaining a lower elevation in the reservoir, replacing the existing flashboard dam with an inflatable bladder dam that would quickly be deployed when inflows are low, and released to allow higher flows to pass safely.

Coyote Creek Flood Management Measures. To reduce flood risks from higher Coyote Creek flows during major storm events caused by maximum Anderson Dam tunnel flows combined with outflows from the existing outlet and local tributary inflows, acquisition or elevation of ten residential properties, and construction of six spans of off-stream floodwalls or levee are proposed.

Implementation of Additional Project-specific Avoidance and Minimization Measures. Implementation of project specific best management practices (BMPs), Coyote Creek avoidance and minimization measures, and other environmental protection measures identified as needed for the FOCP, including measures to avoid and minimize adverse biological impacts to the reservoir and Coyote Creek.

Project Objectives

The underlying purpose of the FOCP is to comply with the FERC Order, requiring immediate implementation of risk reduction measures to protect the public from risk of dam failure due to seismic activity, and development and implementation of necessary AMMs. Primary objectives of the FOCP are to construct improvements and implement operational activities necessary to:

1. Allow Valley Water a way to safely, reliably, and expeditiously draw down Anderson Reservoir to deadpool and maintain lower reservoir elevations to comply with the FERC Order;

2. Minimize risks associated with exceeding the restricted reservoir level and undersized outlet structure by designing and constructing a new, low-level outlet tunnel (i.e., Anderson Dam Tunnel);

3. Prioritize the interim downstream protection of residents and property by decreasing immediate potential risks related to fault rupture from the maximum credible earthquake on the Coyote Creek–Range Front Fault Zone and the number of days that the reservoir elevation exceeds the restricted reservoir level by operating the new Anderson Dam Tunnel; and

4. Minimize the public health and safety and environmental impacts of reservoir draw down, Anderson Dam Tunnel construction, and operations necessary to maintain the reservoir at the FERC ordered elevation through the implementation of AMMs. This includes lessening potential adverse impacts on reservoir and dam bank stability, the existing outlet, reservoir and downstream aquatic resources, downstream flood risks, and water supply and groundwater recharge, including downstream subsidence that may result from reductions in recharge.

Project Construction Delivery

The construction improvements necessary to complete the FOCP broad categories of proposed interim risks measures have been grouped into five construction sub-projects as follows:

1. FOCP Anderson Dam Tunnel, Reservoir & Creek Modifications;
2. FOCP Coyote Percolation Dam Replacement;
3. FOCP Cross Valley Pipeline Extension;
4. FOCP Coyote Creek Flood Management Measures; and
5. FOCP Coyote Creek Stream Augmentation Fish Protection Measure.

The FERC Order requires immediate drawdown of Anderson Reservoir starting this October 2020 and the Anderson Dam Tunnel to begin as soon as possible following the drawdown. The Anderson Dam Tunnel system and creek channel modification design will be completed in July 2020. The reservoir bank and rim stabilization, located at the southern end of reservoir, and modifications to the existing intake structure design will both be completed in 2021. Anderson Dam Tunnel, creek channel modification, reservoir bank and rim stabilization, and modifications to the existing intake structure will be combined into single construction contract, with a construction contract planned to be awarded in February 2021. This grouping of work is considered a single project activity because the tunnel diversion system, creek modifications, reservoir bank and rim, and existing intake structure, collectively protect the dam and residential properties during reservoir drawdown, and therefore must be completed as a single system during construction delivery. The remaining four FOCP construction sub-projects do not share these same constraints and are independent of dam and reservoir rim landslide safety. These sub-projects will need to complete planning, design, and construction prior to or in concurrence with the construction completion of Anderson Dam Tunnel at the end of 2023 and will have separate construction contracts.

The five FOCP construction sub-projects have the following major items of work:

1. FOCP Anderson Dam Tunnel, Reservoir & Creek Modifications

a. The Anderson Dam Tunnel will be installed at Anderson Dam to release and regulate water flows from the reservoir. This system will later be used by the ADSRP to facilitate full reservoir drawdown and will be converted into a larger diversion system to bypass flows during removal and replacement of the existing dam. The Anderson Dam Tunnel will consist of (3) sections of tunnel and pipeline arrangements:

(1) 400-foot long, 8-foot diameter “lake tap” pipe upstream of the dam; connected to

(2) 100-foot long micro-tunnel boring machine launch chamber, connected to a 925-foot long,19-foot diameter reinforced concrete lined, within a 24-foot diameter tunnel; connected to

(3) 375-foot long, 13-foot diameter steel pipeline within an 18.5-foot diameter horseshoe tunnel.

b. The 13-foot diameter steel pipeline will end at the downstream diversion outlet control structure housing (2) 132-inch diameter fixed cone valves connecting to a concrete-enclosed dissipation chambers that discharges into an 86-foot wide, 330-foot long riprap-lined discharge channel leading into Coyote Creek. The outlet control structure will also include a 24-inch diameter sleeve valve to control low flow releases. Also, a realignment of 530 linear feet of the Anderson Force Main will be installed to avoid the outlet control structure and Coyote Creek channel and streambed modifications.

c. The Coyote Creek channel and streambank modifications will re-open the northern Coyote Creek channel and consist of a 600-foot long channel with a 50 feet wide channel bottom. The banks will be protected against erosion with biotechnic stabilization that will allow for revegetation. Distribution of flow between the re-opened northern channel and existing southern channel will be achieved by construction of a 72-foot wide sharp-crested weir at the northern channel and a 5-foot wide U-shaped channel invert at the southern channel.

d. The reservoir bank and rim stability improvements may include a range of physical improvements to protect the reservoir rim from potential landslides due to initial reservoir drawdown and subsequent fluctuations of the reservoir level. This work may consist of one or some combination of installing drainage improvements, slope regrading, buttressing, retaining walls, or soil anchors within the reservoir to prevent progressive failures from impacting properties at Holiday Estates. Based on limited information that is currently available, the physical improvements for the Boat Marina slide may include a 200-foot-long tie-back anchor retaining wall and drainage improvements and the Hoot Owl Way slide may include a combination of drainage improvements, slope regrading, and soil anchors. Repairs due to slide caused damage to East Dunne Avenue will include filling roadway cracks or overlaying the existing pavement.

e. The existing intake stabilization improvements to provide greater resistance to deformation due to seismic shaking, if determined to be needed, could consist of one or some combination of installation of rock anchors or drilled piles throughout most of the slope on both sides of the sloping intake structure above the lowest port, thickening of structural concrete sections, regrading of slopes above the boat ramp, and replacement of mechanical systems with more robust equipment.

2. FOCP Cross Valley Pipeline Extension

a. Valley Water will extend the Cross Valley Pipeline (CVP) to discharge downstream of the County of Santa Clara-owned Ogier Ponds. By discharging imported water below Ogier Ponds more reaches of the creek would stay wetted, which would enable recharge of the Coyote Valley and South San Jose (Santa Teresa area) throughout the construction period and support the maintenance of aquatic habitat for wildlife and riparian vegetation. The Coyote Valley and South San Jose areas recharged by Coyote Creek are part of the larger Santa Clara Subbasin. Groundwater

provides nearly all water supply in these areas, which are dependent upon in-channel percolation to maintain sustainable groundwater supplies. Augmented releases of imported water would also reduce potential subsidence in downstream lands.

b. The pipeline will be designed to have a capacity to carry 50 cubic feet per second (cfs) of imported water. However, on average, it is expected to deliver about 30 cfs during the dry season and 20 cfs during the wet season to ensure managed recharge in Coyote Creek and the Coyote Percolation Pond. Expedited planning, design, and construction processes to implement the proposed pipeline extension would be expected to take approximately 15 months to complete.

3. FOCP Coyote Percolation Dam Replacement

a. The current Coyote Percolation Dam is a flashboard dam used to impound water in the Coyote Percolation Pond, an in-stream pond in Coyote Creek just north of Metcalf Road. Operation of the proposed Anderson Dam Tunnel would result in flows well beyond the safe operating capabilities of Coyote Percolation Dam, which is not rated to handle flows higher than 800 cfs. The maximum release capacity of 2,500 cfs (Anderson Dam Tunnel and existing outlet capacity combined) would overwhelm the Coyote Percolation Dam and removing the dam altogether to accommodate higher flows would further compromise Valley Water's ability to recharge the groundwater basins. To protect against potential risks to groundwater recharge and water supply reliability for the Coyote Valley and South San Jose residents in the Santa Teresa area, Valley Water proposes to replace the existing flashboard dam with an inflatable bladder dam that could quickly be deployed when inflows are low (to facilitate percolation) and then released to allow higher flows to pass safely. Completion of the bladder dam facilities would be required by 2023, when the Anderson Dam Tunnel would be finished, to minimize the impacts to water supply, groundwater recharge, subsidence, and aquatic species and habitats.

4. FOCP Coyote Creek Flood Management Measures

a. Valley Water has identified areas within Coyote Creek where flooding would occur as a result of operating the Anderson Dam Tunnel to ensure compliance with the FERC Order requiring maintenance of deadpool level to the extent feasible. Due to anticipated increased water releases from the Anderson Dam Tunnel necessary to maintain the reservoir at a safe level during and after extreme precipitation events, completion of some elements of flood management measures are needed along Coyote Creek as avoidance and minimization measures to prevent flooding within urbanized areas of Coyote Creek. Three flood protection measures will be constructed by the end of 2023, the same time the Anderson Dam Tunnel construction is completed. The measures will be implemented along Mid-Coyote Creek in San Jose, between Highway 280 and Oakland Road, and will include: floodwalls, a levee, and acquiring or elevating low-lying residences.

(1) *Floodwalls*. Approximately 7,700 linear feet of floodwalls are proposed, in several sections. The sections will vary in height from 2 to 9 feet tall and will most likely be constructed with steel sheet piles. Sheet piles will be installed using silent piling technology that press in the sheets without hammering or vibrations. Such machines ride on top of the sheet piles and are supported by a mobile silent generator unit that travels next to the machine. A crane will be used to lift the machine into place and to move steel sheet piles. Some earthwork activities may be necessary for final grading and can be completed using a compact loader.

(2) *Levee*. A single levee is also being considered to protect from flooding along Coyote Creek. The levee will be approximately 350-foot long and will begin at the upstream end of an existing levee and continue further upstream along Coyote Creek. The levee will be trapezoidal shaped, 12-foot wide at the top, with sides sloping down at 2:1, and will be 4 feet tall. Below the 20-foot wide base of the levee, the existing grade will be excavated to a depth of 5 feet below grade and backfilled with fill material similar to the levee material.

(3) *Elevate or Acquire Low-Lying Homes*. For low-lying properties, and where other measures are not feasible, Valley Water will acquire affected properties or elevate homes located within the Anderson Dam Tunnel operational floodplain. The option to elevate or acquire the properties will vary depending on the feasibility to raise the structure, costs associated with buying or elevating the homes, and input from the homeowners.

Home elevation would involve specialized construction methods to raise the house above the specified flood water surface elevation. This involves trenching around a structure's foundation and lowering I-beams into the trenches and inserting the I-beams below the floor framing. Lifting jacks will be installed between a temporary footing on the ground and the I-beams. The number of jacks needed will depend on the size, shape, and type of house being lifted. The jacks will be used to raise the house to the desired elevation. The foundation, including the slab and walls, will be extended or raised to the new floor framing elevation. The house will then be lowered onto the extended foundation walls, the I-beams will be removed, and the holes where the beams passed through will be filled.

Acquiring properties would remove residents from the threat of inundation from operation of the Anderson Dam Tunnel. No immediate changes to the acquired properties is currently proposed. Additional environmental review may be required should Valley Water propose future physical alterations to the properties, such as demolition of structures.

b. Measures would be implemented as indicated in the following reaches of Coyote Creek:

Reach 5

(1) Area 5A – Design and construct approximately 350 linear feet (LF) of 4-foot tall levee on the south end of the South Bay Mobile Home Park, east of the Union Pacific Railroad (UPRR) tracks.

(2) Area 5B.1 – Design and construct approximately 350 LF of 2-foot tall floodwall to protect homes located on Notting Hill Drive, on east bank of Coyote Creek.

(3) Area 5B.2 – Design and construct approximately 2,000 LF of 9-foot tall floodwall between Berryessa Road and UPRR tracks, on west bank of Coyote Creek.

(4) Area 5C – Design and construct approximately 2,500 LF of 9-foot tall floodwall between Berryessa Road and Mabury Road, on west bank of Coyote Creek.

Reach 6

(1) Area 6A – Design and construct approximately 1,200 LF of 6-foot tall floodwall on west bank from Mabury Road to Highway 101.

Reach 7

(1) Area 7A.1 – Acquire or elevate three properties located on South 17th Street between Santa Clara Street and San Fernando Street.

(2) Area 7A.2 – Design and construct approximately 550 LF of 5.5-foot tall floodwall behind the backyards of two properties located on South 17th Street just north of Arroyo Way.

(3) Area 7B – Acquire or elevate four properties located east of Arroyo Way.

(4) Area 7C – Acquire or elevate two properties located on South 17th Street between San Carlos Street and San Salvador Street.

(5) Area 7D.1 – Design and construct approximately 700 LF of 9-foot tall floodwall along the western edge of Coyote Outdoor Classroom.

(6) Area 7D.2 – Acquire or elevate one property located on East William Street, east of South 16th Street.

(7) Area 7D.3 – Design and construct approximately 400 LF of 4-foot tall floodwall along the backyard perimeter of two properties located at the southern end of William Street Park.

5. FOCP Coyote Creek Stream Augmentation Fish Protection Measure

a. Coyote Creek from the San Francisco Bay to Anderson Dam is designated critical habitat for federally threatened Oncorhynchus *(O.) mykiss* fish. Alteration of creek flows and the lack of a reliable coldwater pool from which to draw would impact steelhead and their habitat, particularly through the recognized Cold Water Management Zone (CWMZ) of Coyote Creek that extends about 5 miles from the base of the dam to Golf Course Drive. If downstream streamflow release are determined to be too warm for *O. mykiss*, chillers can be installed to cool up to 10 cfs of imported water prior to its release into Coyote Creek. Streamflow augmentation releases would be initiated at the end of the wet season and would be continued until the onset of winter rains. This measure is intended to maintain suitable aquatic habitat for native species, and to provide habitat sufficient for *O. mykiss* survival within the CWMZ during the implementation of the FOCP.

b. The chiller system design will include (4) 800-ton chiller units and (1) 4,500 gpm filter unit manufactured on skids, which includes (1) redundant chiller unit. Water temperatures exiting the chiller system will be held between 14-18 degrees Celsius. Completion of this stream augmentation fish protection measure will coincide with the CVP pipeline extension further downstream into Coyote Creek near Ogier Ponds.

B. ZONE BENEFITS

The proposed FOCP benefits customers of Zone W-2 (North County), as well as Zones W-5 and W-7 (South County). Anderson Reservoir is Valley Water's largest surface water reservoir and stores local and imported water providing direct and/or in-lieu recharge benefits to Zones W-2, W-5 and W-7.

C. PROJECT RIGHT OF WAY

The Project will require right of way and real estate agreements with public entities, such as County of Santa Clara, City of Morgan Hill, and the City of San Jose. A small portion of parkland (0.65 acres) will need to be acquired (in fee or permanent easement) in order to fully build the proposed northern channel. Private landowner agreements will also be required to access and construct some portions of the project, particularly for the Coyote Creek Flood Control Measures and Reservoir Rim Monitoring and Stability Improvements.

The parcels that will be impacted by the Project are provided in Table 1. FOCP Parcels and Real Estate Needs, along with identified real estate or right or way requirements, as well as Figure 8a. FOCP Real Estate Map – Anderson Tunnel, Figure 8b. FOCP Real Estate Map – Anderson Reservoir Rim, Figure 8c. FOCP Real Estate Map – Coyote Creek Flood Management Measures (Reaches 5 & 6), Figure 8d. FOCP Real Estate Map – Coyote Creek Flood Management Measures (Reach 7), and Figure 8e. FOCP Real Estate Map – CVP Spur Measure.

D. PROJECT COSTS

The FOCP is to be funded 100% by the Water Utility Enterprise Fund (Fund 61) with 82.3% allocated to Zone W-2 to benefit North County; 8.0% allocated to Zone W-5 and 9.7% allocated to Zone 7 for a total of 17.7% to benefit South County.

The FOCP includes cost for all five sub-projects. The estimated costs to plan, design and construct each of the proposed five sub-projects are shown below, with a collective total FOCP cost of $293.05 million:

1. FOCP Anderson Dam Tunnel, Reservoir & Creek Modifications

a. Planning phase costs: $1.23 million
b. Design phase costs: $7.40 million
c. Land acquisition costs: $6.74 million
d. Construction contract cost: $168.45 million
e. Construction support and close-out phase costs: $36.31 million
f. Total project cost: $220.13 million

2. FOCP Cross Valley Pipeline Extension

a. Planning phase costs: $0.40 million
b. Design phase costs: $2.00 million
c. Land acquisition costs: $0.60 million
d. Construction contract cost: $14.00 million
e. Construction support and close-out phase costs: $3.00 million
f. Total project cost: $20.00 million

3. FOCP Coyote Percolation Dam Replacement

a. Planning phase costs: $0.60 million
b. Design phase costs: $0.60 million
c. Land acquisition costs: $0.05 million
d. Construction contract cost: $4.50 million
e. Construction support and close-out phase costs: $0.70 million
f. Total project cost: $6.45 million

4. FOCP Coyote Creek Flood Management Measures

a. Planning phase costs: $4.40 million
b. Design phase costs: $3.00 million
c. Land acquisition costs: $18.00 million
d. Construction contract cost: $12.01 million
e. Construction support and close-out phase costs: $1.81 million
f. Total project cost: $39.22 million

5. FOCP Coyote Creek Stream Augmentation Fish Protection Measure

a. Planning phase costs: $0.10 million
b. Design phase costs: $0.10 million
c. Land acquisition costs: $0.05 million

d. Construction contract cost: $6.20 million
e. Construction support and close-out phase costs: $0.80 million
f. Total project cost: $7.25 million

E. PROJECT SCHEDULES

All five FOCP sub-projects are to be completed prior to the end of 2023 and the start of the ADSRP construction in 2024. The following shows the remaining project schedules needed to complete the potential five FOCP sub-projects starting with planning, design, construction contract award, complete construction, and ending with close-out.

1. FOCP Anderson Dam Tunnel, Reservoir & Creek Modifications

a. Complete project planning & design: July 2020
b. Award Construction Contract: February 2021
c. Complete Construction: December 2023
d. Close out project: December 2024

2. FOCP Cross Valley Pipeline Extension

a. Complete project planning & design: November 2020
b. Award Construction Contract: February 2021
c. Complete Construction: July 2021
d. Close out project: December 2021

3. FOCP Coyote Percolation Dam Replacement

a. Complete project planning & design: October 2021
b. Award Construction Contract: March 2022
c. Complete Construction: September 2023
d. Close out project: December 2023

4. FOCP Coyote Creek Flood Management Measures

a. Complete project planning and design: March 2022
b. Award Construction Contract: May 2022
c. Complete Construction: December 2023
d. Close out project: June 2024

5. FOCP Coyote Creek Stream Augmentation Fish Protection Measure

a. Complete project planning and design: December 2020
b. Award Construction Contract: April 2021
c. Complete Construction: December 2021
d. Close out project: June 2022

F. LIST OF TABLES

TABLE 1. FOCP Project Parcels and Real Estate Needs

G. LIST OF MAPS AND FIGURES

FIGURE 1. FOCP Project Overview

FIGURE 2. FOCP Anderson Dam Tunnel & Creek Modifications Site Plan

FIGURE 3. FOCP Anderson Reservoir Rim Stability Site Plan

FIGURE 4. FOCP Cross Valley Pipeline Extension Site Plan

FIGURE 5a. FOCP Coyote Percolation Dam Replacement Site Plan

FIGURE 5b. FOCP Inflatable Bladder Dam Example

FIGURE 6a. FOCP Coyote Creek Flood Management Measure Site Plan (Reach 5)

FIGURE 6b. FOCP Coyote Creek Flood Management Measure Site Plan (Reach 6)

FIGURE 6c. FOCP Coyote Creek Flood Management Measure Site Plan (Reach 7)

FIGURE 7a. FOCP Coyote Creek Stream Augmentation Fish Protection Measure Site Plan

FIGURE 7b. FOCP Coyote Creek Stream Augmentation Fish Protection Measure: Chiller Skid Mount Unit

FIGURE 8a. FOCP Real Estate Map – Anderson Dam Tunnel

FIGURE 8b. FOCP Real Estate Map – Anderson Reservoir Rim

FIGURE 8c. FOCP Real Estate Map – Coyote Creek Flood Management Measures (Reaches 5 & 6)

FIGURE 8d. FOCP Real Estate Map – Coyote Creek Flood Management Measures (Reach 7)

FIGURE 8e. FOCP Real Estate Map – CVP Spur Measure

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TABLE 1. FOCP Parcels and Real Estate Needs

PN	Ownership	Jurisdiction	Sphere of Influence	Project Use	Real Estate Needs
Anderson Dam Tunnel Construction and Coyote Creek Channel Modifications					
728-34-010	Private	County of Santa Clara	City of Morgan Hill	Staging Area 2	Temporary Construction Easement
728-34-011	Private	County of Santa Clara	City of Morgan Hill	Staging Area 2 (Coyle Property), Access/haul road	Property Acquisition
728-34-017	Valley Water	County of Santa Clara	City of Morgan Hill	Staging Area 3, Disposal Area, Coyote Road widening and turnouts, Existing Intake, Existing Outlet Conduit	None, owned by Valley Water
728-34-018	Valley Water	County of Santa Clara	City of Morgan Hill	Existing outlet, Staging Area 1	None, owned by Valley Water
728-34-019	Valley Water	City of Morgan Hill	City of Morgan Hill	Temporary dike, Flow control weirs, Southern channel, diversion discharge channel	None, owned by Valley Water
728-34-020	Santa Clara County	City of Morgan Hill	City of Morgan Hill	Reopen north channel, north weir	Property Acquisition (0.65 acres) by fee or Permanent Easement
729-46-010	Valley Water	County of Santa Clara	City of Morgan Hill	Disposal Area, Existing intake remediation, 8-foot MTBM, disposal area, temporary access road to reservoir	None, owned by Valley Water
729-48-001	Valley Water	City of San Jose	City of San Jose	8-foot MTBM, Staging Area 1, 19-foot tunnel, Diversion outlet structure, re-opened northern channel, flow control weirs, Anderson Force Main Relocation	None, owned by Valley Water
729-48-002	Valley Water	City of San Jose	City of San Jose	Diversion Tunnel (Upstream Portal for Lake Tap), Trash rack	None, owned by Valley Water

PN	Ownership	Jurisdiction	Sphere of Influence	Project Use	Real Estate Needs
Rim Stability Improvements					
729-37-022	Private Residence	County of Santa Clara	City of Morgan Hill	Landslide monitoring and potentially remediations	Permission to Enter and potentially an Easement (Permanent or Temporary TBD)
729-37-021	Private Residence	County of Santa Clara	City of Morgan Hill	Landslide monitoring and potentially remediations	Permission to Enter and potentially an Easement (Permanent or Temporary TBD)
729-37-020	Private Residence	County of Santa Clara	City of Morgan Hill	Landslide monitoring and potentially remediations	Permission to Enter and potentially an Easement (Permanent or Temporary TBD)
729-37-019	Private Residence	County of Santa Clara	City of Morgan Hill	Landslide monitoring and potentially remediations	Permission to Enter and potentially an Easement (Permanent or Temporary TBD)
729-37-018	Private Residence	County of Santa Clara	City of Morgan Hill	Landslide monitoring and potentially remediations	Permission to Enter and potentially an Easement (Permanent or Temporary TBD)
720-37-017	Private Residence	County of Santa Clara	City of Morgan Hill	Landslide monitoring and potentially remediations	Permission to Enter and potentially an Easement (Permanent or Temporary TBD)
729-37-016	Private Residence	County of Santa Clara	City of Morgan Hill	Landslide monitoring and potentially remediations	Permission to Enter and potentially an Easement (Permanent or Temporary TBD)
729-37-030	Private Residence	County of Santa Clara	City of Morgan Hill	Landslide monitoring and potentially remediations	Permission to Enter and potentially an Easement (Permanent or Temporary TBD)
729-37-029	Private Residence	County of Santa Clara	City of Morgan Hill	Landslide monitoring and potentially remediations	Permission to Enter and potentially an Easement (Permanent or Temporary TBD)

PN	Ownership	Jurisdiction	Sphere of Influence	Project Use	Real Estate Needs
729-37-013	Private Residence	County of Santa Clara	City of Morgan Hill	Landslide monitoring and potentially remediations	Permission to Enter and potentially an Easement (Permanent or Temporary TBD)
729-37-012	Private Residence	County of Santa Clara	City of Morgan Hill	Landslide monitoring and potentially remediations	Permission to Enter and potentially an Easement (Permanent or Temporary TBD)
729-37-011	Private Residence	County of Santa Clara	City of Morgan Hill	Landslide monitoring and potentially remediations	Permission to Enter and potentially Temporary Construction Easement
729-37-010	Private Residence	County of Santa Clara	City of Morgan Hill	Landslide monitoring and potentially remediations	Permission to Enter and potentially an Easement (Permanent or Temporary TBD)
729-46-010	Private Residence	County of Santa Clara	City of Morgan Hill	Landslide remediation access road	Permission to Enter and potentially an Easement (Permanent or Temporary TBD)
729-36-001	Santa Clara County	County of Santa Clara	City of Morgan Hill	Landslide monitoring and potentially remediations	Master License Agreement-Exhibit B and/or MOU
729-32-015	Private Residence	County of Santa Clara	City of Morgan Hill	Landslide monitoring and potentially remediations	Permission to Enter and potentially an Easement (Permanent or Temporary TBD)
729-32-014	Private Residence	County of Santa Clara	City of Morgan Hill	Landslide monitoring and potentially remediations	Permission to Enter and potentially an Easement (Permanent or Temporary TBD)
729-32-013	Private Residence	County of Santa Clara	City of Morgan Hill	Landslide monitoring and potentially remediations	Permission to Enter and potentially an Easement (Permanent or Temporary TBD)
729-46-010	Valley Water	County of Santa Clara	City of Morgan Hill	Potential landslide remediation and access road	None, owned by Valley Water

PN	Ownership	Jurisdiction	Sphere of Influence	Project Use	Real Estate Needs
729-46-013	Private Residence	County of Santa Clara	City of Morgan Hill	Landslide monitoring and potentially remediations	Permission to Enter and potentially an Easement (Permanent or Temporary TBD)
729-46-003	Santa Clara County	County of Santa Clara	City of Morgan Hill	Landslide monitoring and potentially remediations	Master License Agreement-Exhibit B and/or MOU
729-46-010	Valley Water	County of Santa Clara	City of Morgan Hill	Landslide monitoring and potentially remediations	None, owned by Valley Water
729-46-004	Private Residence	County of Santa Clara	City of Morgan Hill	Landslide monitoring	None, owned by Valley Water
729-46-013	Private Residence	County of Santa Clara	City of Morgan Hill	Landslide monitoring	Permission to Enter
729-46-014	Santa Clara County	County of Santa Clara	City of Morgan Hill	Landslide monitoring and potentially remediations	Master License Agreement-Exhibit B and/or MOU
729-46-010	Valley Water	County of Santa Clara	City of Morgan Hill	Potential landslide remediation and access road	None, owned by Valley Water
Coyote Creek Flood Management Measures					
241-05-014	Private	County of Santa Clara	City of San Jose	Floodwall in Reach 5B.2	Permanent Easement
241-05-015	Private	County of Santa Clara	City of San Jose	Floodwall in Reach 5B.2	Permanent easement
241-05-001	Private	County of Santa Clara	City of San Jose	Floodwall in Reach 5B.2	Permanent easement
241-04-024	Private	County of Santa Clara	City of San Jose	Floodwall in Reach 5B.2	Permanent easement
254-17-052	Private	County of Santa Clara	City of San Jose	Floodwall in Reach 5C	Permanent easement
254-13-101	Private	County of Santa Clara	City of San Jose	Floodwall in Reach 5C	Permanent easement
254-13-090	Private	County of Santa Clara	City of San Jose	Floodwall in Reach 5C	Permanent easement
254-17-043	Private	County of Santa Clara	City of San Jose	Floodwall in Reach 5C	Permanent easement
254-17-073	Private	County of Santa Clara	City of San Jose	Floodwall in Reach 5C	Permanent easement
254-01-024	Private	County of Santa Clara	City of San Jose	Floodwall in Reach 6A	Permanent easement

PN	Ownership	Jurisdiction	Sphere of Influence	Project Use	Real Estate Needs
251-01-004	City of San Jose	County of Santa Clara	City of San Jose	Floodwall in Reach 6A	Permanent easement
254-01-017	Private	County of Santa Clara	City of San Jose	Floodwall in Reach 6A	Permanent easement
254-01-019	Private	County of Santa Clara	City of San Jose	Floodwall in Reach 6A	Permanent and temporary easements
467-29-038	Private	County of Santa Clara	City of San Jose	Acquire or Elevate Structure in Reach 7A.1	Permanent easement or Property Acquisition
467-29-039	Private	County of Santa Clara	City of San Jose	Acquire or Elevate Structure in Reach 7A.1	Permanent easement or Property Acquisition
467-29-027	Private	County of Santa Clara	City of San Jose	Acquire or Elevate Structure in Reach 7B	Permanent easement or Property Acquisition
467-29-026	Private	County of Santa Clara	City of San Jose	Acquire or Elevate Structure in Reach 7B	Permanent easement or Property Acquisition
467-29-036	Private	County of Santa Clara	City of San Jose	Acquire or Elevate Structure in Reach 7B	Permanent easement or Property Acquisition
467-29-035	Private	County of Santa Clara	City of San Jose	Acquire or Elevate Structure in Reach 7B	Permanent easement or Property Acquisition
467-39-103	Private	County of Santa Clara	City of San Jose	Acquire or Elevate Structure in Reach 7C	Permanent easement or Property Acquisition
467-39-102	Private	County of Santa Clara	City of San Jose	Acquire or Elevate Structure in Reach 7C	Permanent easement or Property Acquisition
467-50-065	Private	County of Santa Clara	City of San Jose	Acquire or Elevate Structure in Reach 7D.2	Permanent easement or Property Acquisition
467-29-029	Private	County of Santa Clara	City of San Jose	Floodwall in Reach 7A.2	Permanent easement
467-29-028	Private	County of Santa Clara	City of San Jose	Floodwall in Reach 7A.2	Permanent easement
467-39-101	Private	County of Santa Clara	City of San Jose	Floodwall in Reach 7D.1	Permanent easement

PN	Ownership	Jurisdiction	Sphere of Influence	Project Use	Real Estate Needs
467-39-100	Private	County of Santa Clara	City of San Jose	Floodwall in Reach 7D.1	Permanent easement
467-50-077	Private	County of Santa Clara	City of San Jose	Floodwall in Reach 7D.1	Permanent easement
467-50-076	Private	County of Santa Clara	City of San Jose	Floodwall in Reach 7D.1	Permanent easement
467-50-075	Private	County of Santa Clara	City of San Jose	Floodwall in Reach 7D.1	Permanent easement
467-50-074	Private	County of Santa Clara	City of San Jose	Floodwall in Reach 7D.1	Permanent easement
467-50-073	Private	County of Santa Clara	City of San Jose	Floodwall in Reach 7D.1	Permanent easement
467-50-069	Private	County of Santa Clara	City of San Jose	Floodwall in Reach 7D.1	Permanent easement
467-50-068	Private	County of Santa Clara	City of San Jose	Floodwall in Reach 7D.1	Permanent easement
472-31-042	City of San Jose	County of Santa Clara	City of San Jose	Floodwall in Reach 7D.3	Permanent easement
472-31-041	Private	County of Santa Clara	City of San Jose	Floodwall in Reach 7D.3	Permanent easement
472-31-040	Private	County of Santa Clara	City of San Jose	Floodwall in Reach 7D.3	Permanent easement
CVP Spur Measure					
725-06-008	County of Santa Clara	County of Santa Clara	City of San Jose	Pipeline alignment	Permanent easement

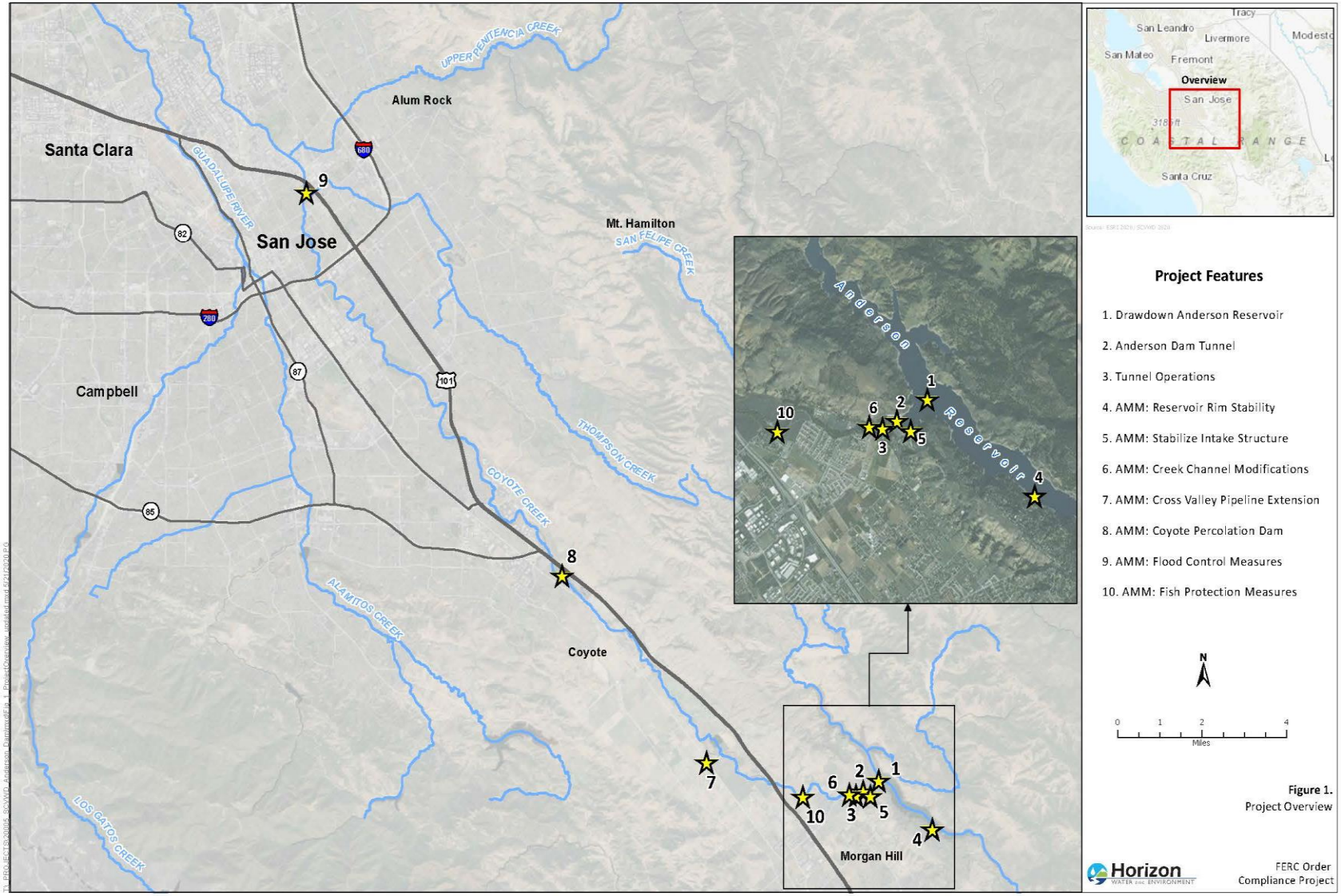


FIGURE 1. FOCP Project Overview

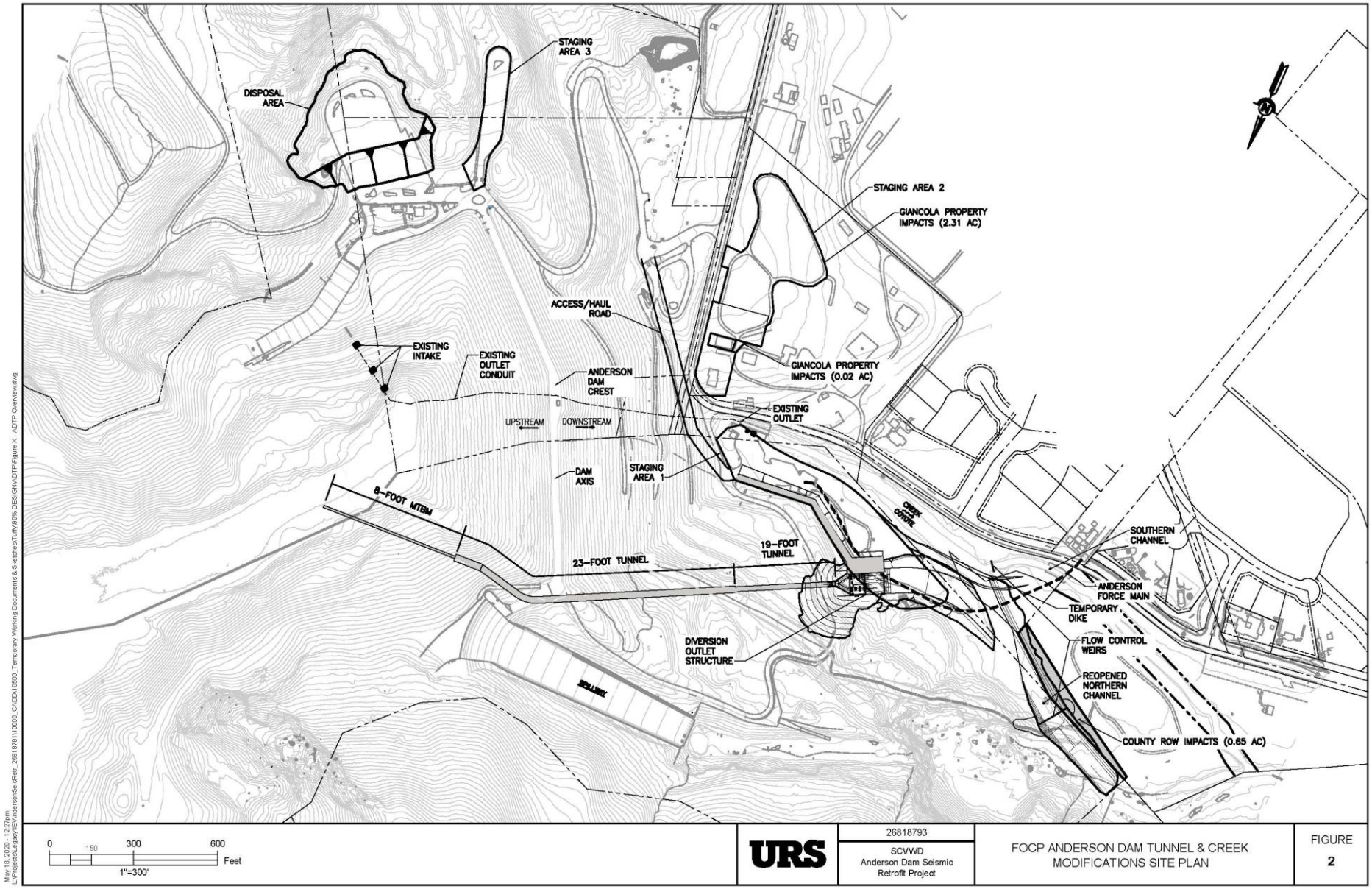
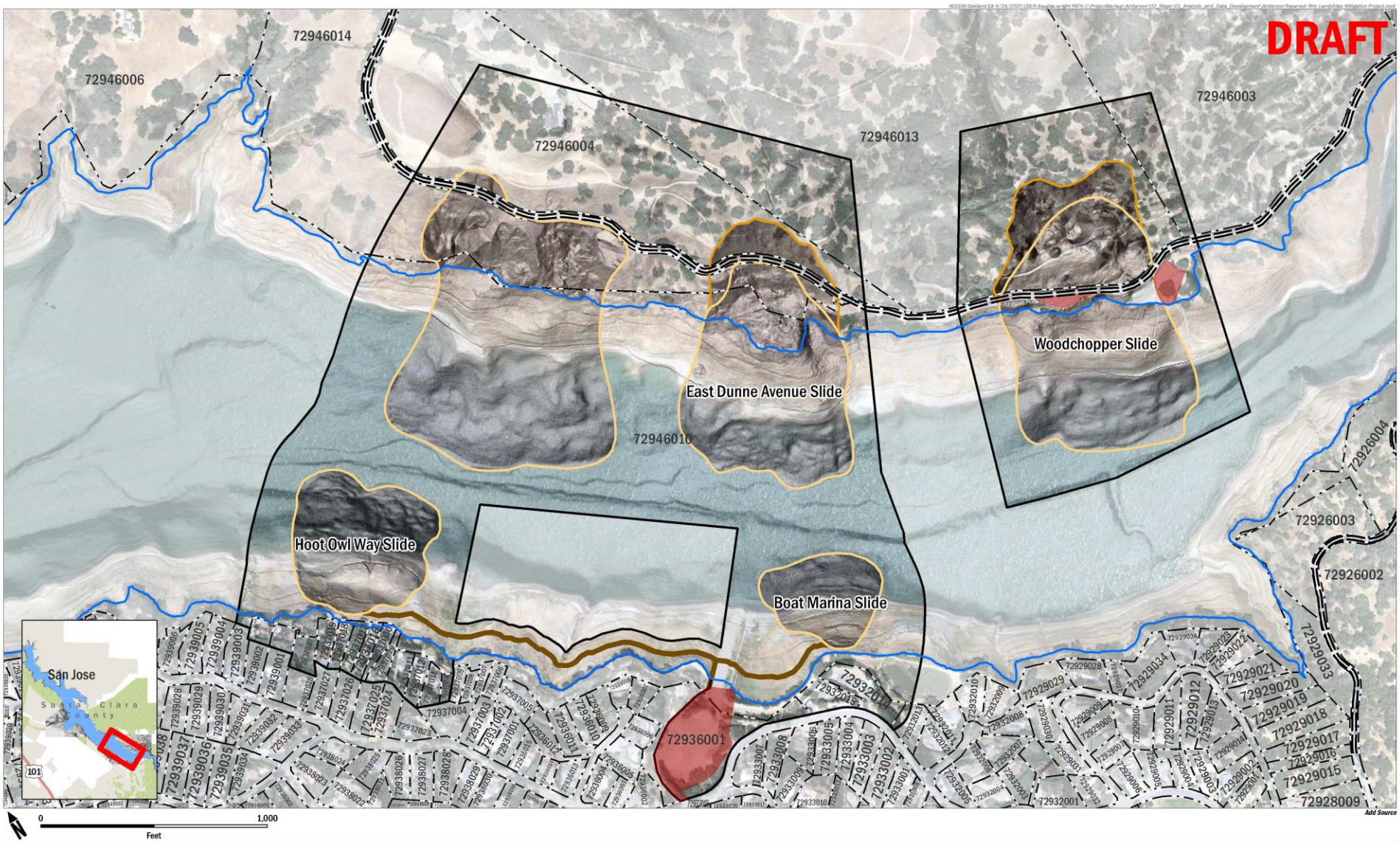


FIGURE 2. FOCP Anderson Dam Tunnel & Creek Modifications Site Plan



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Anderson Dam Seismic Retrofit Project

Parcels (2018)
Potential disturbance area due to mitigation
Slide Access Road
Slide Mitigation Staging Area
Spillway Elevation (672 ft, NAVD88)
Landslide Outlines from 09/08/1987 Interpretation of Aerial Imagery (AMEC, 2013)
LiDAR 2016 Interpretation

FIGURE 3
FOCP Anderson Reservoir Rim Stability Site Plan

FIGURE 3. FOCP Anderson Reservoir Rim Stability Site Plan

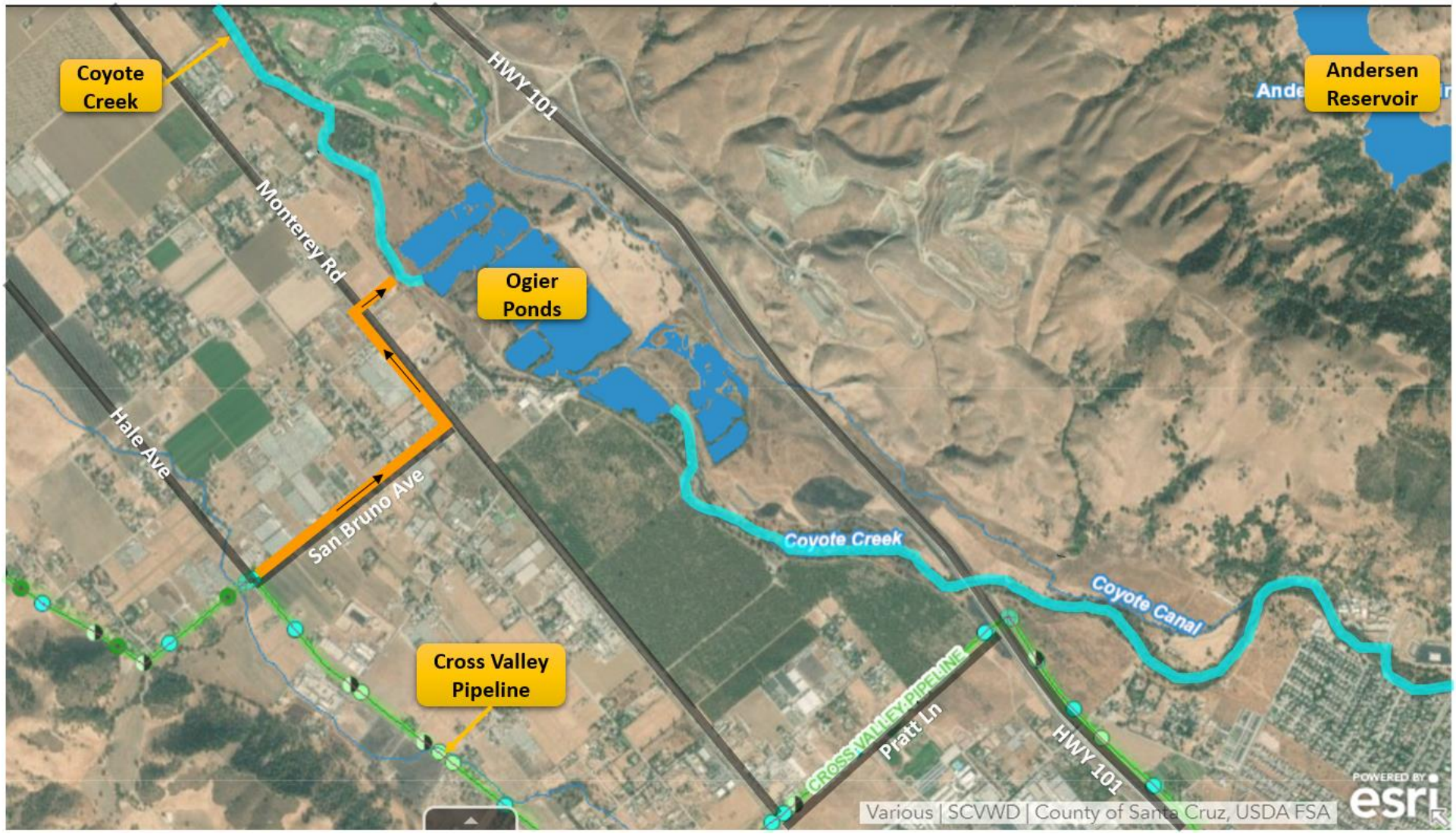


FIGURE 4. FOCP – Cross Valley Pipeline Extension Site Plan

1 Perc. Pond Dam Replacement and Fish Ladder Modification

2 Construction Staging Area. On existing County Parks parking lot and may require temporary construction easement from County of Santa Clara (Parcel No. 67802032).

Construction Access Road. Extending 4,800 feet from Metcalf Road to Perc. Pond Dam and may require temporary construction easement from County of Santa Clara (Parcel No. 67802032).

FIGURE 5a. Coyote Percolation Dam Replacement Site Plan

FIGURE 5b. FOCP Inflatable Bladder Dam Example

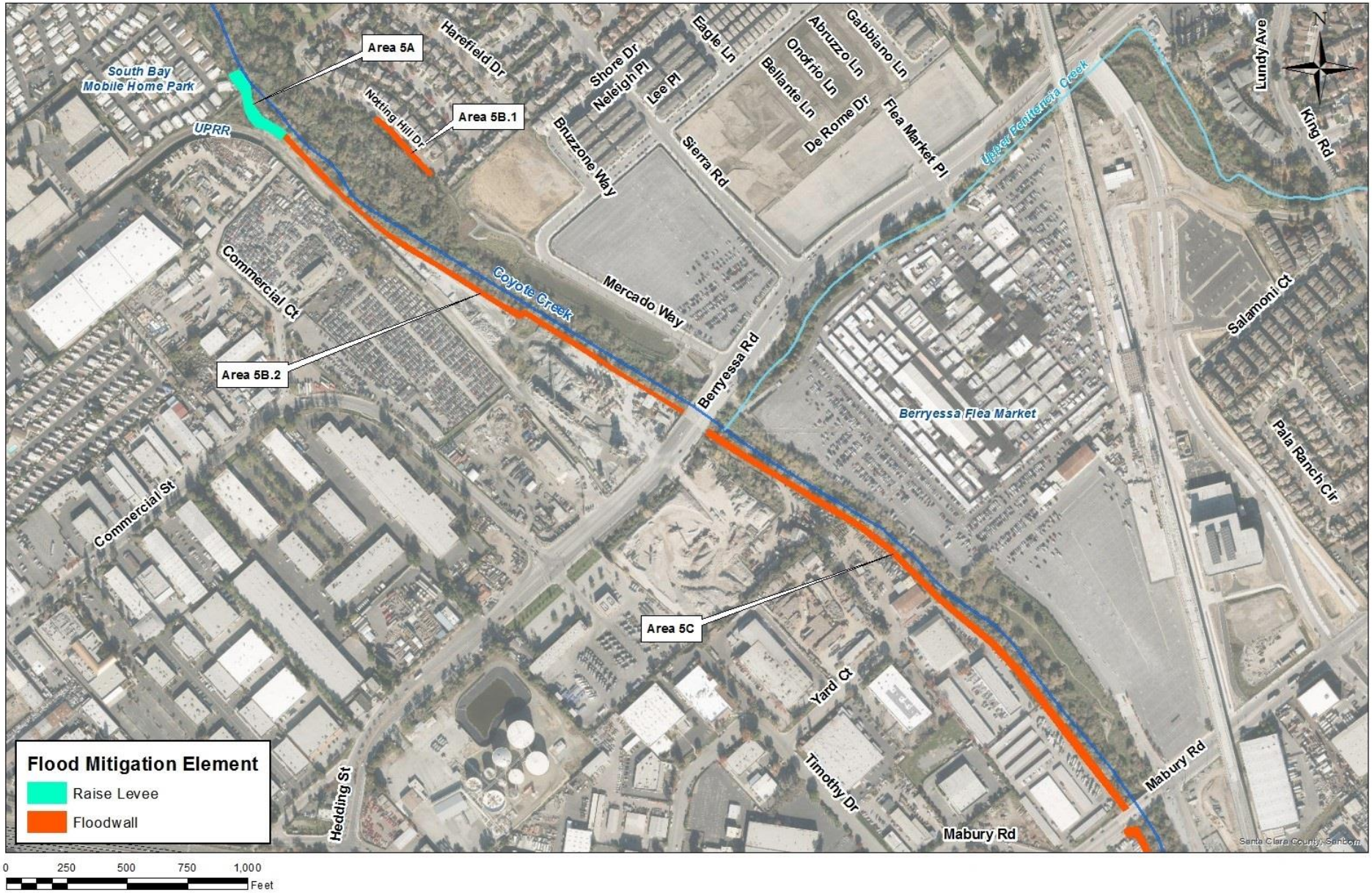


FIGURE 6a. FOCP Coyote Creek Flood Management Measures Site Plan (Reach 5)

FIGURE 6b. FOCP Coyote Creek Flood Management Measures Site Plan (Reach 6)

FIGURE 6c. FOCP Coyote Creek Flood Management Measures Site Plan (Reach 7)

FIGURE 7a. FOCP Coyote Creek Stream Augmentation Fish Protection Measure Site Plan

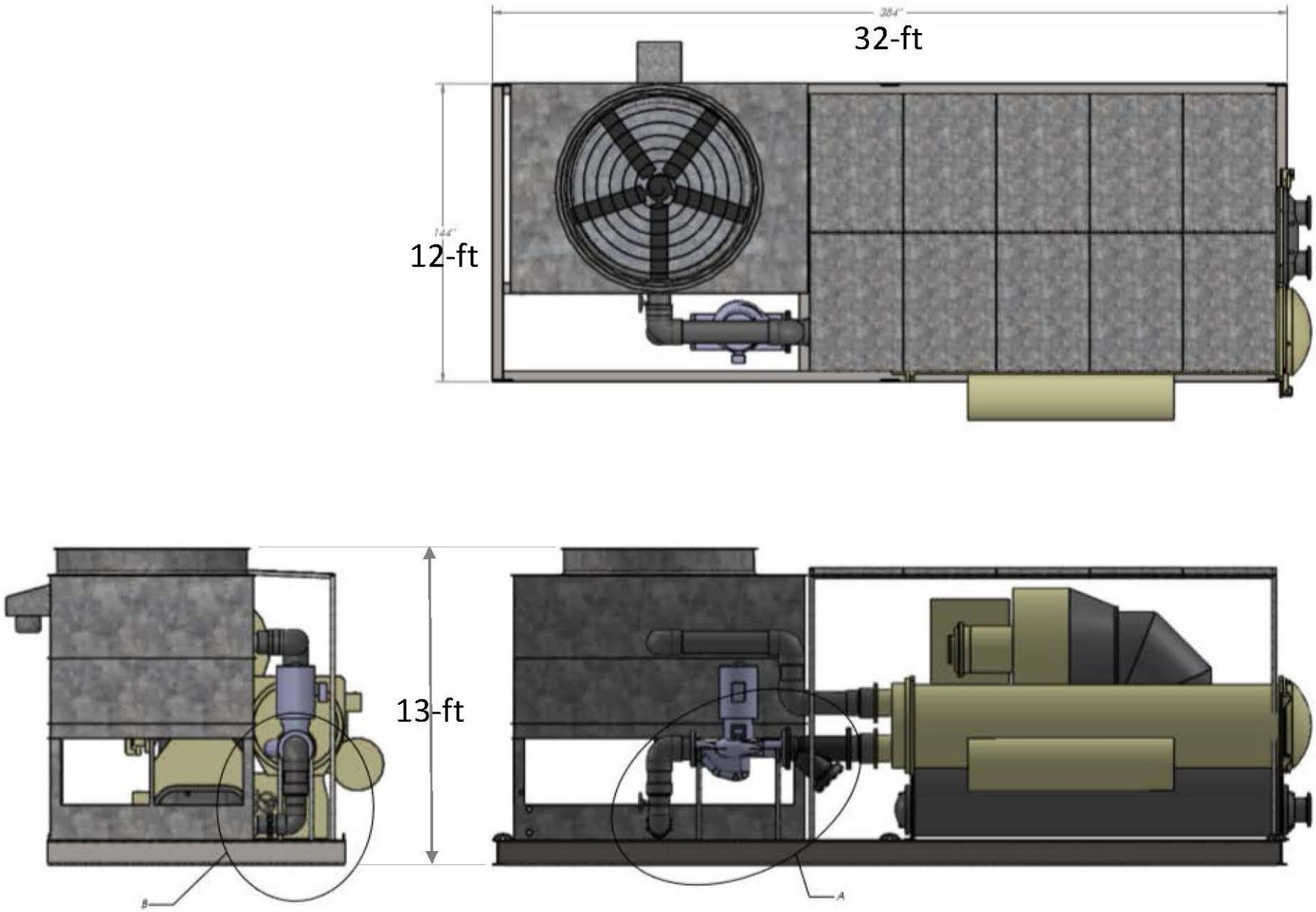
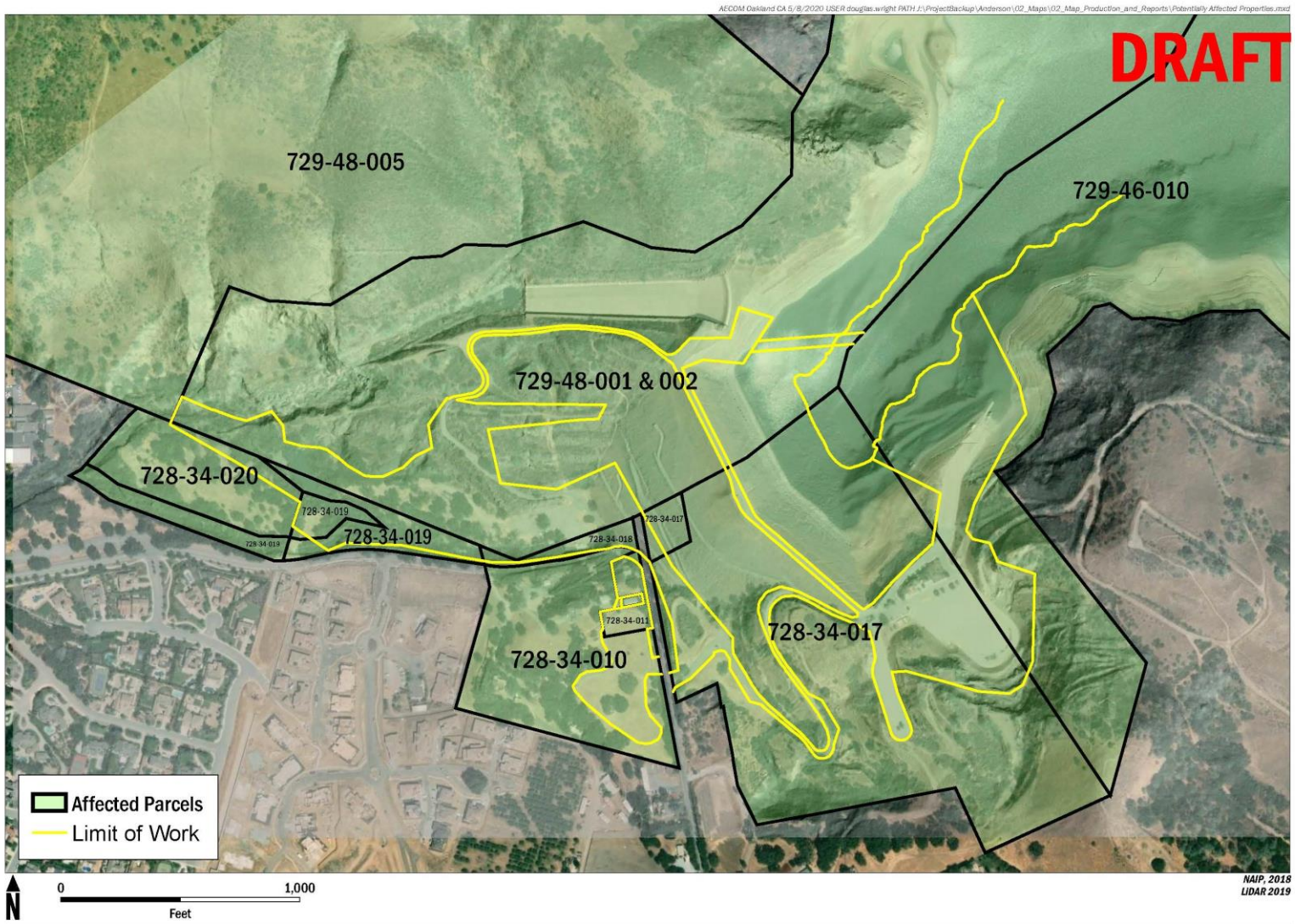


FIGURE 7b. FOCP Coyote Creek Stream Augmentation Fish Protection Measure: Chiller Skid Mount Unit



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Anderson Dam Seismic Retrofit Project

FIGURE 8a. FOCP Real Estate Map – Anderson Dam Tunnel

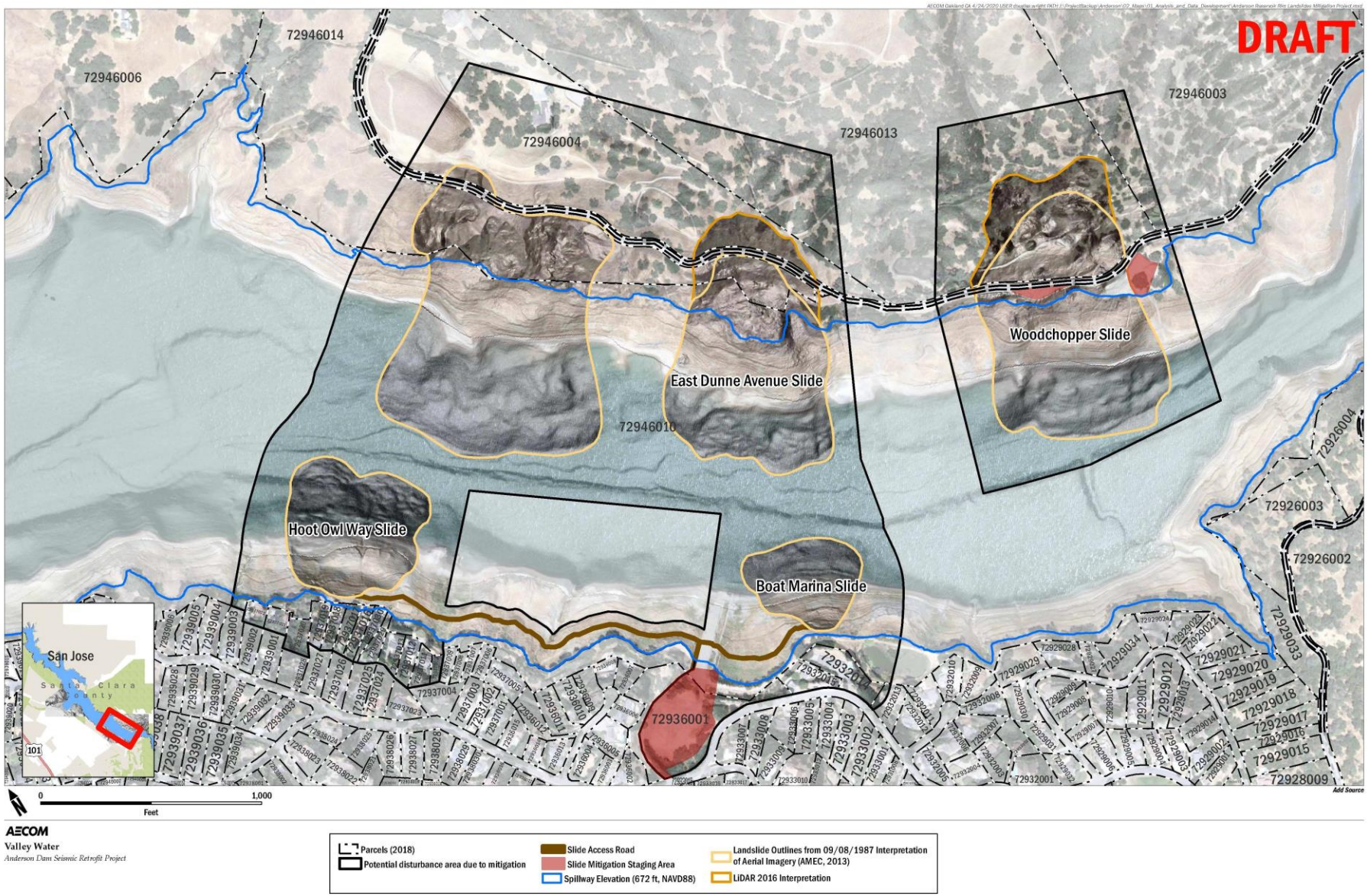
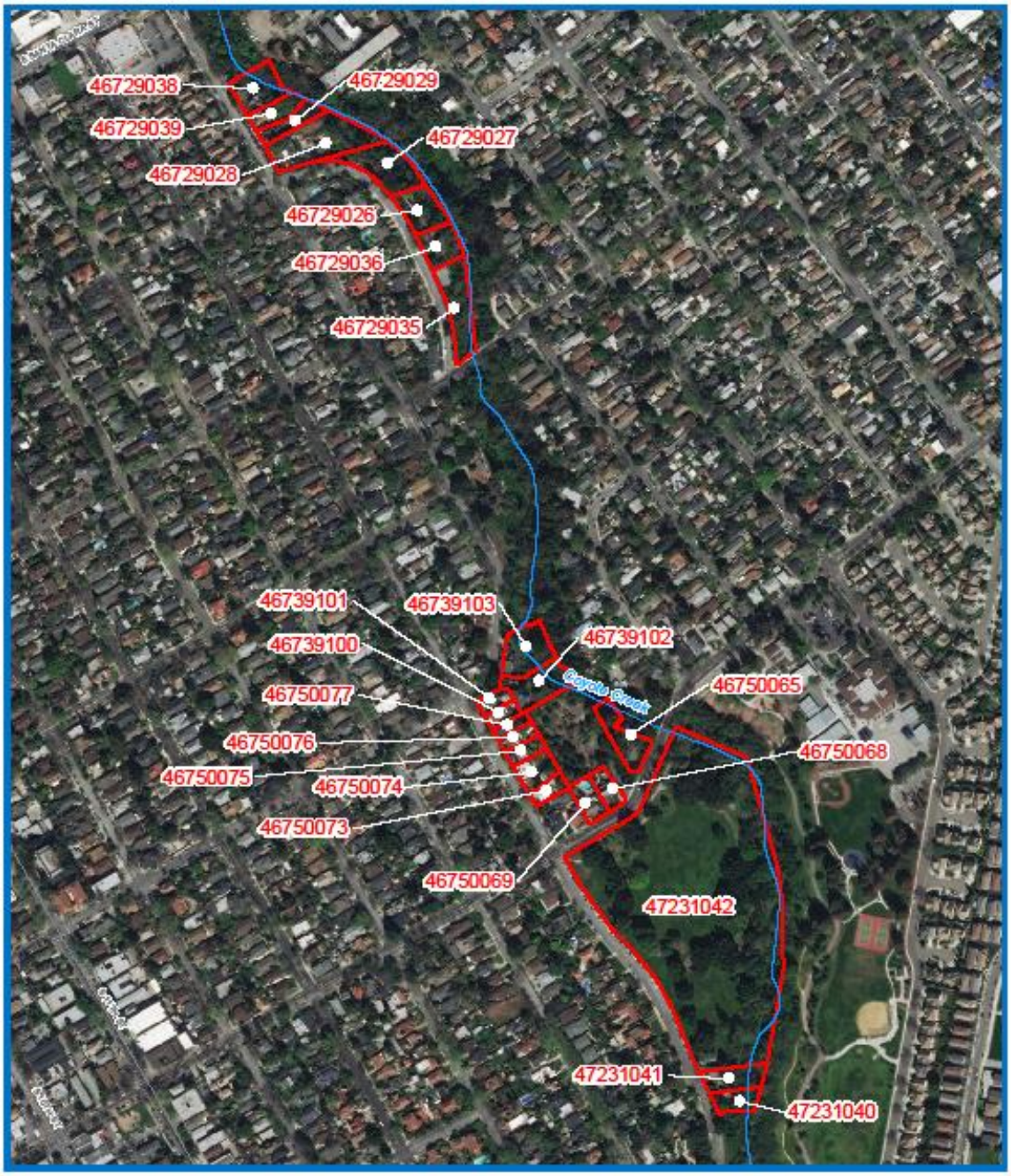


FIGURE 8b. FOCP Real Estate Map – Anderson Reservoir Rim

FIGURE 8c. FOCP Real Estate Map – Coyote Creek Flood Management Measures (Reaches 5 & 6)



Legend

parcels

0 250 500 1,000 Feet

Approximate Scale

Figure 8d FOCP Real Estate Map – Coyote Creek Flood Management Measures

GIS themes are for illustration and general analysis purposes only and are not accurate to surveying or engineering standards. Information is not guaranteed to be accurate, current, or complete and use of this information is your responsibility.

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parcelsD.mxd, 8x11, 06/04/2020

FIGURE 8d. FOCP Real Estate Map – Coyote Creek Flood Management Measures (Reach 7)

Legend

parcels

0 500 1,000 2,000 Feet

Approximate Scale

Figure 8e FOCP Real Estate Map – CVP Spur Measure

GIS themes are for illustration and general analysis purposes only and are not accurate to surveying or engineering standards. Information is not guaranteed to be accurate, current, or complete and use of this information is your responsibility.

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FIGURE 8e. FOCP Real Estate Map – CVP Spur Measure